

CLAIMS

WE CLAIM:

1. An air ventilation structure for a portable power device in a natural convection mode, comprising:
 - an output cord; and
 - a stand, coupled to the output cord, for mounting a power module in a substantially vertical orientation, the stand having a base with a first vertical piece extending from the base to a first fin that extends out from the base away from said module in a first direction, and having a second vertical piece extending from the base to a second fin that extends out from the base away from said module in a second direction, the power module plugging into the stand defining a first gap along an edge of the first fin that is adjacent to the a first side of the power module and defining a second gap along an edge of the second fin that is adjacent to the second side of the power module, the stand allowing vertical heat dissipation generated by the power module with air flow vertically through the first and second gaps and along respective substantially vertical surfaces of said power module.
2. The air ventilation structure of Claim 1, wherein the stand comprises a third vertical piece extending from the base to the first fin, a fourth vertical piece extending from the base to the second fin, the first and third vertical pieces forming a first vanes-shaped configuration with an opening between the first and third vertical pieces, the second and fourth vertical pieces forming a second vanes-shaped configuration with an opening between the second and fourth vertical pieces.

3. The air ventilation structure of Claim 1, wherein the stand comprises a male socket, the power module having a female socket connected to the male socket of the stand.
4. The air ventilation structure of Claim 1, wherein the stand comprises a female socket, the power module having a male socket connected to the female socket of the stand.
5. The air ventilation structure of Claim 1, wherein the stand having a reel section for winding and unwinding of an input power cord.
6. The air ventilation structure of Claim 1, wherein the base of the stand has a footprint that provides stability for vertically mounting the power module.
7. The air ventilation structure of Claim 1, wherein the power module comprises a power converter.
8. The air ventilation structure of Claim 1, wherein the power module comprises a power generator.
9. The air ventilation structure of Claim 1, wherein the power module comprises a fuel cell energy generator.
10. The air ventilation structure of Claim 1, further comprising an input power cord coupled to the stand.

11. An air ventilation structure for a portable power device in a forced convection mode with a replaceable air fan, comprising:

an air fan; and

a stand, coupled to the output cord, for mounting a power module in a substantially vertical orientation, the stand having a base with a first vertical piece extending from the base to a first fin that is parallel to the base and having a second vertical piece extending from the base to a second fin that is parallel to the base, the power module plugging into the stand for creating a first gap along an edge of the first fin that is adjacent to the a first side of the power module and creating a second gap along an edge of the second fin that is adjacent to the second side of the power module, the stand allowing vertical heat dissipation generated by the power module with the air fan generating air flow vertically through the first and second gaps.

12. The portable power device of Claim 11, wherein the air fan is a replaceable unit.

13. The portable power device of Claim 11, wherein the air fan is build-in into the stand.

14. The air ventilation structure of Claim 11, wherein the stand comprises a third vertical piece extending from the base to the first fin, a fourth vertical piece extending from the base to the second fin, the first and third vertical pieces forming a first vanes-shaped configuration with an opening between the first and third vertical pieces, the second and fourth vertical pieces forming a second vanes-shaped configuration with an opening between the second and fourth vertical pieces.

15. The air ventilation structure of Claim 11, wherein the stand comprises a male socket, the power module having a female socket connected to the male socket of the stand.
16. The air ventilation structure of Claim 11, wherein the stand comprises a female socket, the power module having a male socket connected to the female socket of the stand.
17. The air ventilation structure of Claim 11, wherein the stand having a reel section for winding and unwinding of an input power cord.
18. The air ventilation structure of Claim 11, wherein the base of the stand has a footprint that provides stability for vertically mounting the power module.
19. The air ventilation structure of Claim 11, further comprising an output cord coupled to the stand.
20. The air ventilation structure of Claim 1, wherein the power module comprises a power converter, a power generator, or a fuel cell energy generator.